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London WC1V 7LE(GB)(54) **Star sightings by satellite for image navigation.**

(57) Stars are sensed by one or more instruments (1, 2) on board a three-axis stabilized satellite, for purposes of assisting in image navigation. A star acquisition computer (64), which may be located on the earth, commands the instrument mirror (33, 32) to slew just outside the limb of the earth or other celestial body around which the satellite is orbiting, to look for stars that have been cataloged in a star map stored within the computer (64). The instrument (1, 2) is commanded to dwell for a period of time equal to a star search window time, plus the maximum time the instrument (1, 2) takes to complete a current scan, plus the maximum time it takes for the mirror (33, 32) to slew to the star. When the satellite is first placed in orbit, and following first station-keeping and eclipse, a special operation is performed in which the star-seeking instrument (1, 2) FOV is broadened. The elevation dimension can be

broadened by performing repetitive star seeks; the azimuth dimension can be broadened by lengthening the commanded dwell times.

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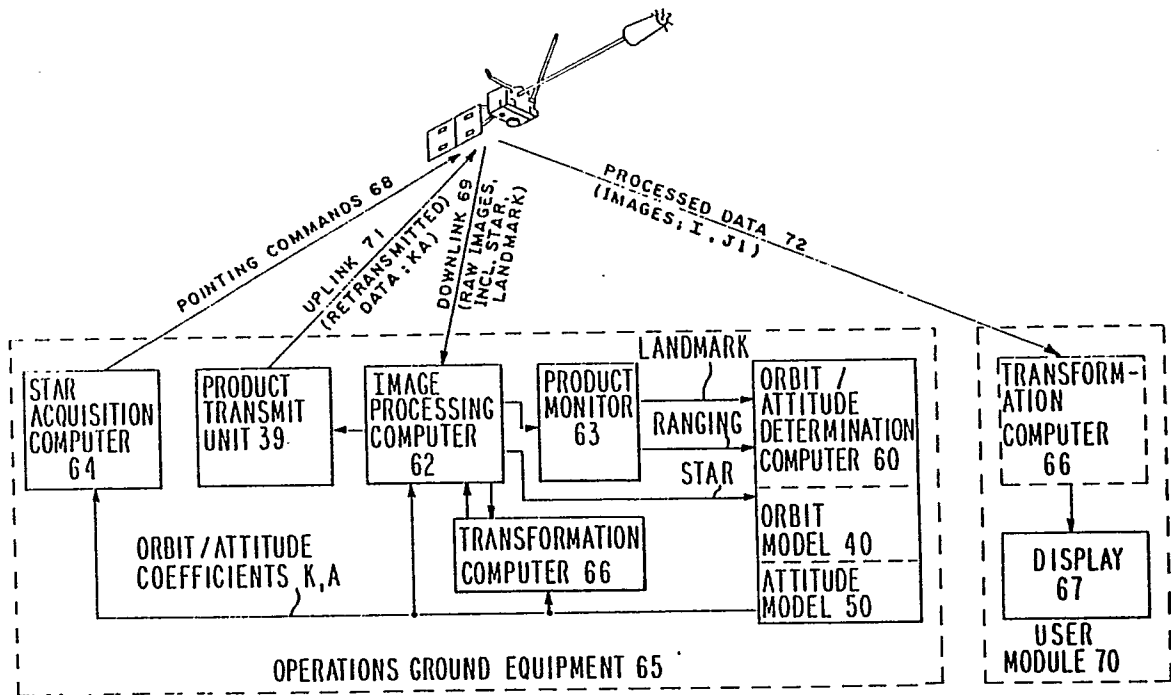


FIG.8 IMAGE NAVIGATION SYSTEM FUNCTIONAL BLOCK DIAGRAM



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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. 4)
X	WO-A-8 601 593 (HUGHES AIRCRAFT) * Abstract; claims 1-3,6 *	1,2	G 01 C 21/00
D,A	US-A-3 952 151 (JENKIN) ---		
D,A	US-A-4 300 159 (HUMMER et al.) -----		
			TECHNICAL FIELDS SEARCHED (Int. Cl.4)
			G 01 C B 64 G G 05 D H 04 N
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 09-11-1988	Examiner KOLBE W.H.
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document			
T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			